

# Chemotherapy in the Geriatric Population

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America is aging. The population of people aged 65 and older is growing. The U.S. Census Bureau estimates that 12.6% of the population is 65 and older, and this percentage is projected to increase to 20.3% by the year 2030 (Kinsella & Velkoff, 2001). This translates into 70 million people older than 65 by the year 2030 (Administration on Aging, 2000). As a result, gerontologic considerations in the delivery of health care become increasingly important as a greater proportion of the population ages. Healthcare professionals must become adept at managing the complexities associated with older patients because these patients often present with multiple comorbid conditions and a higher rate of disability (Lueckenoette, 2000b).

Cancer occurs more frequently and causes more deaths in the older population. Cancer ranks second to heart disease as the leading cause of death in the United States (Anderson, 2002). Although cancer occurs across all age groups, 60% of all malignancies occur in those older than 65 (Ries et al., 2003). When considering all types and sites of cancer, the median age for the occurrence of a malignancy is 68 years (Edwards et al., 2002). In addition, Edwards et al. reported that the incidence and death rate from cancer for people older than 75 are two times higher than for those aged 65–74. In light of the current and growing population of older adults and

The population in America is aging, and the number of older adults who develop cancer continues to grow. Gerontologic considerations in the delivery of health care become increasingly more important as a result of these population trends. Factors such as physiologic age-related changes, comorbid conditions, and the incidence of polypharmacy contribute to the challenges of administering chemotherapy to older patients with cancer. Age-related physiologic changes, including alterations in the gastrointestinal system, renal system, body composition, and hematopoiesis, impact patients' ability to tolerate standard doses of chemotherapy. In addition, these changes increase the likelihood of developing severe toxicities. Comorbid conditions compound the side effects of chemotherapy, and the use of multiple medications places older patients with cancer at increased risk for developing drug interactions. Older patients with cancer may be more susceptible to developing toxicities from chemotherapy, and these toxicities may be more severe. When healthcare professionals follow age-appropriate standards of oncology care, chemotherapy can be safely and effectively administered to older patients with cancer. Oncology nurses play a crucial role in assessing for potential complications and managing toxicities. Incorporating geriatric care into oncology nurses' daily practice ensures quality care for older patients with cancer.

**Key Words:** geriatric nursing, drug therapy

subsequent increase in cancer rates, age-appropriate care when treating cancer becomes an important issue for oncology nurses.

A growing body of knowledge suggests that chemotherapy can be safe and effective in older patients (Crivellari et al., 2000;

Hiddemann et al., 1999; Popescu, Norman, Ross, Parikh, & Cunningham, 1999). However, antineoplastic agents carry an increased risk of toxicities for older adults (Crivellari et al.; Kimmick, Fleming, Muss, & Balducci, 1997). Enhancing oncology nurses' understanding of how geriatric physiology alters the pharmacologic properties of chemotherapeutic drugs can improve the quality of patient assessment, diagnosis of patient problems, implementation of nursing interventions, and evaluation of patient care, resulting in improved overall care of older patients with cancer. This article will review the physiologic changes associated with aging, chemotherapeutic toxicities in older adults, and other nursing considerations associated with the use of chemotherapy in the geriatric population.

## Age-Related Physiologic Changes in Older Adults

Many physiologic changes occur in the human body as it ages. Virtually every organ system is affected. These physiologic changes may impact older patients' ability to tolerate standard doses of chemotherapy as well as the resulting side effects. Understanding

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